

The cosmological aspects of food in the material world

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There is a general tendency today to believe that all truth worth knowing is to be found in the various branches of the physical sciences. If this were so, there could be no place for a philosophy of matter, or by extension the cosmological aspects of food. In order to vindicate cosmology and its extension from the charge of futility it will be necessary to determine: what cosmology is, what it does, and to explore the cosmological aspects of food, and later to perform a similar task for science; in this way only can it be shown that there room for both a culinary philosophy, and a culinary science, including the world of food, each with its own problems and its own methods of investigation.

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Introduction

The purpose of an introduction to any paper is to outline its scope and utility. This task is exceptionally important in addressing the cosmological aspects of food, because food is one of life's great, sustaining and ubiquitous pleasures, and the genre of culinary arts and hospitality education is the vehicle for the study these phenomena. I am indebted to Fr. Edwin Rabbitte, OFM, for his lectures and his book *Cosmology for All*, for the inspiration, after a considerable lapse of time, to link cosmology and food in the material world. For nearly forty years, I've been teaching, researching, writing, and talking about food, usually with people who disagree with me, about 'the meal-experience', as well as the 'business' of operating successful restaurants. I have come upon the cosmological aspects of food only very recently.

Cosmology is understood as the philosophy of matter. Chemistry and physics are the sciences that deal with matter. To many people in the culinary arts field 'science' and 'philosophy' are mysteries, barriers to learning, and an inhibiting authority rather than a facilitator of the means and methods for learning.

Today, there is a general tendency to believe that all truth worth knowing about matter is to be found in the various branches of the physical sciences. If this were so, there could be no place for a philosophy of matter, or by extension the cosmological aspects of food. This paper should end here.

The reason it does not is because of my most recent reading of KC Chang's (ed.) (1977) *Food in Chinese culture; anthropology and historical perspectives*. Therein, I came across a section heading in the chapter by EN Anderson Jr and Maria Anderson titled *The cosmological aspects* (376) which in turn drove me to research this phenomenon – cosmology. 'Cosmology', according to Rabbitte (1956), in his little book *Cosmology for all*, 'is understood as the philosophy of matter'.

Anthropologists tell us that in virtually all traditional cultures, a cosmology is what gives its members their fundamental

sense of where they come from, who they are, and what their personal role in life's larger picture might be. Cosmology is whatever picture of the universe a culture agrees on. Together with the picture-upholding, the picture-is, a story that is understood to explain the sacred relationship between the way the world is and the way human beings should behave. Other cultures' stories may not have been 'correct' by modern scientific standards, but they were valid, for and in, their own time and by their own standards, and they had the power to ground people's codes of behaviour and their sense of identity within a larger picture. This sense of identity may be part of what has been lost in our contemporary society.

For example, if we were to ask a modern audience of people interested in cosmology, but untrained in it, to close their eyes and visualise the universe, some will report seeing endless space with stars scattered unimaginably far apart, others will see great spiral galaxies, and others will see an exotic scene such as the rising of an ember-red moon over an unknown planet. They do not realise that these are merely snapshots on a given scale of the universe – no more representative of the universe as a whole than is a single molecule of DNA or a moonrise over your own backyard. The strange fact is that in modern Western culture, people have only the vaguest idea how to picture the universe, and certainly there is no consensus on it.

The lack of social consensus on cosmology in the modern world has caused many people to close off their thinking to the larger issues, and long time scales, so that small, immediate matters dominate their consciousness. Of course, modern people know much more about many things than members of isolated, traditional cultures, but we are not so different in our basic needs from people millennia ago. We have to get our sense of context somewhere. It is worth looking at earlier cosmologies and the cultures in which they held sway in order

to understand how deep and in fact how inextricable the connection is.

The thing is that food and culinary arts sit as a lesser genre in the education firmament to philosophy, sciences, the arts, literature and human drama.

This has always astonished me, as culinary arts and gastronomy affect all of us, everyday, and indeed several times a day, for all of our lives. Today, the fact that food is a vital part of the chemical process of life is to state the obvious, but we frequently fail to realise and acknowledge that food is much more than vital to human existence (Hegarty, 2014).

So why is this field of endeavour not – the most sought after? After all food was once all that concerned us humans. That makes food the most important material in the world.

I believe that the utilitarian aspects of food and cooking being ‘necessary’ for survival may have inhibited the academic study of culinary arts and gastronomy. For their survival needs, all men and women everywhere would eat the same foods, to be measured only in calories, fats, carbohydrates, proteins, and vitamins. But clearly this is not the case – people of different backgrounds and ethnologies eat very differently. Thus is the importance of culinary arts and gastronomy established.

Food is agriculture, horticulture, biology, psychology, transport, human connection, animal connection, waste, health, medicine, nurture, nature, science, and also gastronomy – ‘all that pertains to the nourishment of man’ (Brillat Savarin).

Indeed Lévi-Strauss (1965) observes that just as there is no human society which lacks a spoken language, so also, there is no human society which does not in one way or other process some of its food by cooking. Therefore, cooking is a means by which nature is transformed into culture. Edmund Leach emphasises this point by stating;

In that we are all men (women) we are all part of nature, in that we are all human beings we are all part of culture. Our survival as men (women) depends on our ingestion of foods (part of nature); Our survival as human beings depends on our social categories which are derived from cultural classification imposed on elements of nature...

Food is an especially appropriate mediator because when we eat, we establish in a literal sense, a direct identity between ourselves (culture/civilisation) and our food (nature).

Along the road to civilisation and technological prowess we humans appear to have lost our imagination, but not totally, and not all of us, but most of us. And as we live in the equivalent of a large termite nest, only with wifi, and Nintendo, most of us hold sway. That is worrying because I’ve come to the conclusion that the sway-holding most of us are not that imaginative, or at least not when it comes to creative, intellectual thought.

The lack of social consensus on the cosmology of food in the modern world has caused many people to close off their thinking to large issues and long time scales, so that small immediate matters dominate their consciousness. We have to get our sense of context somewhere. It is worth looking at earlier cosmologies and the cultures in which they held sway in order to understand how deep and in fact inextricable the connection is.

Cosmology a ‘special metaphysics’

Cosmology comes from the Greek word *kosmos* which, according to the Shorter Oxford English Dictionary means ‘the world or universe as an ordered system’ or ‘order, harmony, a harmonious system’. Cosmology then, means the theory of the universe as an ordered whole, and of the general laws which govern it. In philosophy, it is taken to mean that part of metaphysics which deals with the idea of the world as a totality of all phenomena in space and time. According to Greek thought, *cosmos* came out of chaos – ‘the formless void: a state of utter confusion and disorder’ – by differentiating the various elements. The concept is often associated with *cosmogony*, ‘a theory, system, or account of the generation of the universe’.

In social anthropology, the meaning of cosmology has broadly followed the dictionary one, and is closely connected to the empirical study of religions. To a large extent the two words have been used interchangeably, depending upon theoretical fashions and the predilections of the anthropologist. Some have used it to mean no more than religion. Edmund Leach (1982, 229), for example, defined it as ‘the system of beliefs and practices which social anthropologists commonly refer to as primitive religion’.

Philosophy is the metaphysical study of reality, that is, the study of reality from the point of view of ‘being’. It is divided into ‘general metaphysics’ which studies ‘being’ in general and its essential properties, and ‘special metaphysics’, which studies the different classes or ‘modes’ of being considered separately. Special metaphysics comprises two main branches: ‘rational psychology’, or the metaphysical study of the organic or living world, and ‘cosmology’ or the metaphysical study of the inorganic or purely material world.

Cosmology then is a branch of metaphysics – more precisely, of ‘special’ metaphysics. To understand, therefore, the nature and scope of cosmology, it is necessary to know something about the relation that exists between ‘general’ and ‘special’ metaphysics.

Seen from its source, metaphysics may be described as an effort of the human mind to attain by reflection to a knowledge of the intimate nature and ultimate signification of things, especially of man himself. This effort is rooted in the most profound structure of man’s nature; it is truly ‘existential’, since it springs from the nature of man’s existence as man. For man, in the consciousness he has of himself experiences his existence as an existence that is called upon to realise itself as a ‘liberty’, or person. Hence it is that the questions inevitably arise: what is man? And what is the meaning of his existence? As long as man cannot answer this question, he cannot realise himself as a ‘liberty’, for liberty in its deepest sense is precisely the power that man has to accept consciously the meaning of his existence as man, and to conform his activity to this meaning. Thus, there is a close link between metaphysical reflection and human liberty; this is why the metaphysical question becomes most acute in those situations in which man is brought face-to-face with the meaning of his existence as a free person – e.g. in times of moral crisis, or at the moment of death, when the obligatory character of certain acts, or the meaning of life itself as a whole is questioned. Though it has its origin in a peculiarly human problem, however, metaphysical reflection bears from the very first, and always, on existence or being as a totality – it transcends every partial

view of the real. The reason for this is the profound ontological similitude which binds all existents together and which causes man himself to experience his existence as an existence-in-the-world. Thus, the study of the intimate nature and ultimate meaning of human existence is inseparable from the study of the contents, structure and meaning of existence as a whole. However, precisely because metaphysics is a peculiarly human problem, metaphysical reflection is necessarily conditioned by the 'situation' of man in the world, i.e., by the finitude or limitations characteristic of man. For example, it is believed that humans have been using fire for hundreds of thousands of years, yet archaeology does not tell us exactly when our ancestors began to do so. The inability of the archaeological evidence to tell us when humans first controlled fire directs us to biology, where we find two vital clues. First, the fossil record presents a reasonably clear picture of the changes in human anatomy over the past two million years (Wrangham, 2009). Now in the first place human thought is not a creative thought. Man is the source neither of himself nor of the world: he experiences his existence as a 'fact' as something 'given', and this existence is an existence in a world that is also a 'fact', that is 'already there' or is 'given'. For this reason metaphysical reflection must start with and nourish itself continually on 'experience', that is, contact with the real. And, in the second place, this experience itself, being essentially a human experience is profoundly limited: it is never the experience of the real as a totality, of being as such, but always experience, partial and progressive, of 'individual' or 'particular' beings.

To conclude, we can now state the relation that exists between general metaphysics, or the study of being as such, and special metaphysics, or the study of particular beings considered separately. On the one hand we cannot study the structure and meaning of being in general or as a totality, except in the measure that this being is manifested in the particular beings of our experience; and, on the other hand, we cannot study the structure and meaning of particular beings except in the light of the totality of being in which these beings participate. Hence, general and special metaphysics are closely akin: both are animated by the same intention (to discover the meaning of being or reality), and both have the same starting point (the concrete, individual beings of experience), but whereas general metaphysics aims at discovering the meaning of being as a totality, special metaphysics seeks to discover the basic structure or essence and the ultimate signification of particular beings – of living beings (psychology) or of the material world (cosmology).

Nature, scope and method of cosmology

Cosmology therefore, as a branch of philosophy, is the metaphysical study of the material world. Its aim is to discover, by an effort of reflection, the manner of being or the 'essence' of this world and its signification and place in the totality of the real. This reflection, like all metaphysical reflection, must be based on experience, or contact with the real; hence cosmology presupposes that our intellect is capable of entering into contact with the mode of being that is proper to the material world. This contact is made in our everyday life of sensation, in scientific experiment, and in our action, in general, on the material world.

Note that *scientific experience* is included as pertaining to the experimental basis of cosmology. It would be naive

to think that the 'familiar' world of everyday experience is more 'objective' than that of science, and that therefore it is sufficient to analyse the data of 'common-sense' to construct a cosmology. This does not mean, however, that our common-sense knowledge of the material world is false, but that it is confused. Its greatest fault, from the point of view of cosmology, is that it does not so much tell us what the material world is in itself as how we react to or behave in that world. For it must be remembered that the function of sense-knowledge as such is primarily biological: its chief purpose is to enable us to live our lives in the material world, not to know that world exhaustively. Science, however, aims at a much more objective and more comprehensive knowledge of the material world: it seeks to discover what the world is in itself, rather than how we see and behave in it. Hence the use it makes of objective measuring-processes, by which it endeavours both to eliminate the subjective element introduced into reality by the knowing subject and to reach to those aspects of the material world that are inaccessible to sense-knowledge. It may be objected that such a method can, in the final analysis, attain only to the *metrical* aspect of the material world. We shall have occasion to return to this later, but it may be remarked here that the aspect of the world discovered by science is at least more objective and more comprehensive than that discovered by sense-knowledge alone, and that it therefore enables us to form a more objective and ever richer idea of the material universe.

The outline followed in this paper is as follows. In the first section we describe, as concisely as possible, what science is and what it does, in order to show the distinction between the scientific and the philosophical approach to the material world. In later sections we give what may be called a 'phenomenological description' of the material world, i.e., a description of it – its characteristic properties, its diversity, and its activity – such as it manifests itself to the intellectual consciousness in everyday experience and in the more technical experience of science. Finally, we endeavour by an effort of metaphysical reflection based in this description to discover all we can concerning the mode of being or 'essence' of the material world and its signification or place in reality as a whole.

The world of physical science

The same material world which forms the subject matter of cosmology is studied also, by the various branches of natural or experimental science. The 'natural sciences' are those which deal with the phenomena of the material universe. They are called 'experimental' both because they are based on sensible experience and also and especially because they *refer constantly* to this experience as the *sole* criterion of the validity of their conclusions. The natural sciences comprise the physico-chemical sciences, which treat of phenomena of inorganic nature, and the biological sciences which treat of phenomena of organic or living nature. Hence the importance, both for the philosopher and for the scientist, of distinguishing clearly between the problems proper to each of these two divisions of human knowledge. In the introduction we described the nature scope and method of cosmology. We shall now perform a similar task for sciences, but only in so far as is necessary to determine the precise import of its statements about the material world and to show that these statements leave the ultimate or philosophical problems untouched.

Our enquiry may be summarised as follows; the fundamental aim of science is the reduction of the sequence of natural occurrences to order, with a view to the calculation and prediction, and ultimately to the control, of the phenomena of nature. As a system of knowledge science is characterised chiefly by the method by which it collects its data (scientific 'facts'), and by the manner in which it *synthesises* and *explains* these data (scientific 'laws' and 'theories'). Thus science is constructed not merely by observation and experiment, but also by reflection on the data thus acquired. In *all* cases, however, the conclusions of science must admit of experimental verification; this is the very touchstone of scientific truth. However, reference needs to be made here to what have become known as the *research paradigm wars*, a description of research methods of contrasting persuasions, which have become known as Positivism/scientific and post-positivism – the basis of the natural sciences. It presents a quantitative perspective (Pawson 1999, 30, Kane and O'Reilly-de Brun 2001, 24–43). Phenomenology, another paradigm presents a qualitative perspective. A third paradigm is critical theory which holds that there is an objective world which the observer can stand apart from and investigate. But whose world is it? Is it the world of the philosopher, the chef, the restaurant owner, the customer, the food writer, or the culinary educator?

Academic elites have had charge of the research agenda, setting the questions, funding the research and interpreting the results. This challenges the purpose of research which aims to empower people to set their own action agendas. The term "paradigm" was introduced into the literature by Kuhn (1970, 175–182) who intended to convey the idea that research gets organised not just through rational adoption of particular strategies and methodologies, but rather, that all the contributory ideas get wrapped up into an overall "vision", or "creed" or "doctrine" about the correct way to do research. Thus, methodology, Kuhn points out, can itself become a kind of dogmatism which includes identifying good practice, and thereby excludes, by vilifying alternative approaches as misguided, wrong-headed, dim-witted and so on.

Each of these schools of thought pays homage to a contrasting set of first principles, and over the last forty years the extent to which the qualitative revolution has overtaken the social sciences and related professional fields is most striking (Denzin and Lincoln 1994, ix). Prior to that, the general approach to research was positivist, (hard science) that is, it placed an emphasis on numbers and statistics, experimental design, and survey research. The aim of the positivist researcher is to seek generalisations and 'hard' quantitative data. The influence of the positivist scientist paradigm continues to be strong and pervasive shaping expectations of what constitutes 'proper', 'valid', and 'worthwhile' research. Barry Troyna described it thus in 1994:

There is a view which is already entrenched and circulating widely in populist circles ..., that qualitative research is subjective, value-laden and therefore, unscientific and invalid, in contrast to quantitative research, which meets the criteria of being objective, value free, scientific and therefore valid (1994, 9).

The social sciences originally adopted the methodologies of the physical sciences. Today, researchers in many fields including culinary have opened up to ethnomethodology,

unstructured interviewing, conversational and textual analysis, documents and historical studies and many other theoretical paradigms of research. The interpretative researcher accepts that the observer makes a difference to the observed and that reality is a human construct – the researcher's aim is to explore perspectives and shared meanings and to develop insights into situations, e.g., restaurants, kitchens. Data will generally be qualitative and based on fieldwork, notes, transcripts of conversations/interviews.

For this and the following sections (see Renoirte, transl. Coffey 1950, 101–174, also Rabbittie 1955, 17–34). The first step in research is the collection of data. This science does by a method which is peculiarly its own and which, in the scientists' view, endows scientific knowledge with qualities which make it superior to everyday sense knowledge. These qualities are objectivity, communicability, and verifiability.

A critical examination of our everyday sense knowledge shows that it is always, to a greater or lesser extent personal and subjective. Sensation is a complex reaction of the knowing subject to the action of external objects on his sense-organs. In this reaction it is impossible to separate what comes from the knowing subject and what from the external object; there is always *something* of the knowing subject in sensation – a subject, for example, with different senses than mine would perceive the external world differently. Hence it is that sense-knowledge, as such, is incommunicable and unverifiable by others, for, since it is impossible to compare the lived impressions of different subjects, it is strictly impossible to know if different subjects have the same sensation when confronted with the same material object, and so we cannot ever be absolutely certain that the words each uses to describe these objects have the same *meaning* for all. For example, many books contain maps of the tongue that claim that the tip recognises sweet and so on. To witness that all tongues are different, all you have to do is ask a group of individuals to stick their tongues into sweet or salty water, and record the results (This 2009, 7).

Now science claims that its knowledge, unlike sense-knowledge, is impersonal and objective, and hence communicable and verifiable by all. It bases this claim on the fact that it has, by its method, 'depersonalised' sense-knowledge and made it strictly objective by excluding from it as far as possible, the influences of the psychological dispositions personal to the knowing subject. Science has done this in effect by substituting strictly material processes for our sense-organs, and scale or pointer readings for our sense-impressions. For example, for everyday, uncritical knowledge the heat of a body is defined by the particular sensation I get when I touch it. This sensation is strictly personal to me; no one can ever verify it, for no one but myself knows what I sense when I feel warm. Clearly, this knowledge tells me much more about myself than about the external world; when I say for example, that a body is 'hot', what I really mean is, that it is such that, when I touch it, I get a sensation which I call 'heat'. The scientist on the other hand, defines the heat of a body by the pointer reading on a thermometer which he places in contact with that body. The observation of this reading is wholly independent of the scientist's own sensation of heat: whether the body 'feels' hot or not is of no interest to the scientist; he speaks only of the pointer reading given by the thermometer and not of his personal sensation of heat. Hence it is that his knowledge is

impersonal and so communicable and verifiable, for no matter what may be the sensation experienced by the scientist who, on touching a body says it is hot, all know the meaning of and can verify his statement that the heat of a body is so many degrees of temperature. Examples of the differences between common-sense and scientific knowledge or data could be multiplied indefinitely, and especially in the field of culinary and gastronomy. Such common-sense data as the sound, weight, colour, etc., of bodies are defined by the different sensations contact with these bodies provoke in us in different domains of perception, on the basis of which we attribute to them qualities or properties of different kinds or at least different intensities. The scientist, however, having established that certain material instruments give different pointer readings when suitably arranged in relation to the bodies in question, and that these different readings are concomitant with the variations of sensations of a different type, elects to redefine the properties, hitherto defined by sensations, by the use of appropriate instruments. And so he defines sound by the vibrations recorded on a phonograph, weight by the elongation of a spring-balance, colour by the angle of refraction of light in a prism....

The method, therefore, by which science collects and defines its data or “facts” is the utilisation of suitable material instruments. Scientific properties are *defined* by the measuring process by which they are known; hence *any* body which can be subjected to the appropriate measuring process possesses the physical property which this process defines. Again, since different bodies are defined in terms of their properties (for we say ‘what kind’ a body is by enumerating its properties) it follows that, for science bodies are defined in terms of the numbers given by the pointer reading of the measuring-process to which the bodies in question can be subjected. For example science defines hydrogen as a gas which liquifies at such a temperature, has such a density, emits such a light etc. this definition simply means that the name hydrogen is given to that particular thing which, when subjected to the measuring processes defining fluidity, temperature, viscosity, wavelength of light etc., gives the numbers indicated in the definition. This does not mean, of course, that a body *is* merely an aggregate of numbers, but that it is ‘something’ which science, for its own purposes *defines* by property measurements.

Science and philosophy

Among science’s claims, is its claim to be an exact observational and experimental investigation of nature – its methods, it states, is *exclusively* observation and experiment. Hence, the self-imposed limitations of science as a form of knowledge are, first, that its explanations can never be *complete* explanations, for they can be valid only for a partial or abstract aspect of reality, viz., that aspect that can be, directly or indirectly, observed and measured, and secondly, that its explanations can never be ultimate explanations, since, by the very nature of its method, science *begins and ends* with a sensible ‘given’ which it regards as *outside* the domain of scientific intelligibility.

The second of these limitations requires, perhaps, some explanation. Science begins by assuming the existence of an external world which has different properties (which science defines by the use of different measuring-processes) and which is constantly changing (changes which science formulates as

laws). If this ‘given’ science endeavours to give a complete mechanical explanation – i.e. science accepts mechanism as a working hypothesis, and as the *only* working hypothesis. In other words, science endeavours to explain the actual diversity and change of the material world in terms of elements (waves, particles etc.) that are imagined to an existence of the *same kind* as that possessed by the objects if sense-perception. It does not matter that these elements are for the most part *inaccessible* to sense-perception – they are always thought of as having properties the *same in nature* as those possessed by perceptible bodies. Thus science takes the sensible order not only as the *starting point*, but as the *goal* of its inferences. In this sense scientific explanation is essentially *descriptive* – it answers the questions ‘how’? Rather than the question ‘why’? Hence it is that all scientific explanations lead in the end to a question or hypothesis and that no matter how far science progresses there will always be another question to ask..

Philosophy on the other hand claims to study the *integral* real – not merely the ‘here and now’ of everyday sensible experience, still less merely ‘concrete facts’ of positive science, but the real in all its richness and concreteness. The method to which it appeals is not therefore experiences only, either sensible or scientific, but metaphysical reflection on *global* experience. In this way philosophy claims to attain to *ultimate* causes and so to offer *complete* explanations. Thus, the scope of philosophy is all-embracing, extending to – and beyond – the existence of the science itself, for one of the questions the philosopher must ask himself is how and why nature is amenable to scientific formulation. We may conclude this paper with a word of caution. It should be clear from what has been said that cosmology cannot under any circumstances be taken as a substitute for the experimental study of nature carried out by science. As a branch of metaphysics, the aim of which is to interpret nature, cosmology is incapable of adding a single ‘fact’ to the sum of ascertained ‘facts’ about the universe. The suspicion with which cosmology was for so long viewed by positive science was, in the beginning at least, due to the fact that cosmology, in the form of Aristotelian ‘physics’, claimed that the experimental investigation of facts of nature also belonged to its domain – i.e. the ‘philosophy’ of nature was also the ‘science’ of nature. In the present day this claim is no longer made, but the danger now is that cosmology may be regarded as valueless, precisely because it is incapable of adding to our store of facts about nature – in other words, the danger is now that the ‘science’ of nature may also be regarded as the ‘philosophy’ of nature. But cosmology, as a branch of philosophy, is not concerned with the accumulation of facts but with the interpretation of certain previously ascertained facts. These facts are discovered by experience of the material world, an experience which includes scientific experience, hence it is that the cosmologist must use the conclusions of experimental science, not with a view to incorporating them as such into philosophy, but as a means of acquiring an ever richer and more objective knowledge of material reality. Indeed a philosophy worthy of the name must take account of all the general conclusions of science in regard to the nature and genesis of the inorganic, the organic, and the human, though it must always critically examine these conclusions in order to determine their value for interpretation of the essence and ultimate meaning of the real.

The aim of cosmology then is to discover not merely the profound nature or essence, but also, the ultimate signification or meaning of material being, i.e. the place or function of this being in the totality of the real. For, as we saw in the introduction, metaphysics transcends all partial aspects: it bears from the first and always on being as a totality. And in particular beings only as pertaining to that totality.

When we consider the universe as a whole, we find that this whole is a complex whole, comprising many different levels and structures from inorganic matter up to and including man. From the metaphysical point of view these structures form a hierarchy of perfection or 'degrees' of being, based on an order of increasing 'interiority' or individuality. The most elementary structure of reality is that of inorganic matter; this, as a spatio-temporal exteriority or dispersion, constitutes, metaphysically speaking, the lowest level of perfection in the visible universe. Above the level of inorganic matter are the various levels or 'degrees' of life. Now life on whatever level it be considered, manifests itself as a real and active synthesis, i.e. the reduction of a diversity to a unity. The lowest level of life – vegetative life – utilises inorganic matter, and reduces the diversity of this matter to the unity of an organism. The next level of life – sensory or animal life – utilises in its turn vegetative life: sensory life can take place only in and by the organism, and the properties of sensory life presuppose and include those of vegetative life. Here the synthesis or the reduction of diversity to unity is much greater than the vegetative life, for in sensory life the quantitative diversity of the organism is unified in qualitatively simple sensation. And finally, the highest level of life known to us in nature – the intellectual, volitional or spiritual life of man – presupposes and utilises a very highly developed form of sensory life. Here the reduction of diversity to unity reaches its maximum, for in human life the sense-knowledge and sense-affections of purely animal life are transcendently unified in the ideas and values of the higher spiritual self. In many of the folk religions of the ancient world there is no clear distinction between the

sacred and the secular, or between this world and the other world; there is simply one universe. And it is natural that food should be viewed as a critical part of the most demanding and difficult communication of all – communication with the invisible portion of the world. Another paper would be required to engage with the topic of the use of food in religious practice.

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